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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Seok Kyu Park

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EXAMINER

GOLIGHTLY, ERIC WAYNE

ART UNIT

PAPER NUMBER

4151

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DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/516,604	<b>Applicant(s)</b> PARK, SEOK KYU	
	<b>Examiner</b> Eric Golightly	<b>Art Unit</b> 4151	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 03 December 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-35 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3 December 2004</u> .   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Claim Objections***

2. Claims 7, 27 and 31 are objected to because of the following informalities:

Claim 7 refers to “the step of washing” of claim 1, which has no such step as currently amended. It appears that the applicant means to refer instead to “the step of permeating” and this meaning will be used for purposes of examination.

Regarding claim 27, the term “setting a reserved time” is not entirely clear. It appears that the term is meant to refer to setting the machine such that at a specific time of the day, e.g. 1:00 pm, the cleaning process is initiated. This interpretation will be used for purposes of examination.

Regarding claim 31, it appears that applicant meant to include the word “includes” after the word “further,” and this meaning will be used for purposes of interpretation.

Appropriate clarification and/or correction is required.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 21-26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is not entirely clear what is meant by the term "washing times" as taught in these claims. It appears that the applicant may have meant to refer to number of completed laundry washing operations and this meaning is presumed to be intended for purposes of examination.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 1-6, 8-18 and 20-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over KR 2001060776 to Han (hereinafter “Han”) in view of KR 2004045115 to Cho, et al. (hereinafter “Cho”). Han teaches a method of cleaning a tub of a washing machine comprising the steps of supplying water to a tub and soaking polluted materials with the supplied water, which reads on soaking the contaminants. (See the abstract)

Regarding claims 1-5, Han does not explicitly teach that no laundry is to be introduced into the tub, permeating water into the contaminants, removing contaminants stuck to a surface of the tub, using a predetermined time for soaking the contaminants, separating soaked contaminants from the surface of the tub, and draining water from the tub. Cho teaches a washing machine tub cleaning method wherein the contaminants are soaked for a predetermined time (abstract). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the predetermined time teaching of Cho with the soaking step of Han in order to allow for time-based automation of the cleaning method.

It would have been obvious to one of ordinary skill in the art at the time of the invention to supply water without laundry in order to prevent cross-contamination from the tub to the laundry or vice versa. Further, it would have been obvious to one of ordinary skill in the art at the time of the invention to drain water from the tub because draining is conventional technique for discharging contaminated water (the abstract of US 5,285,664 to Chang, et al., for example,

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teaches an automatic washing machine and the draining of contaminated water therein). Note that Han teaches discharging polluted materials, or contaminants, with water (abstract). As to permeating water into the contaminants, removing contaminants stuck to the surface of the tub and separating soaked contaminants from the surface of the tub, these limitations are inherent in the Han method because the water supplied to the tub will permeate, remove and separate contaminants.

Further regarding claims 2-5, Han/Cho do not explicitly teach supplying water to the surface of the tub during draining thereby preventing resticking of the contaminants to the surface of the tub. However, It would have been obvious to one of ordinary skill in the art at the time of the invention to supply water during draining for enhancing the cleaning process with a reasonable expectation of success.

Further regarding claims 3-5, Han/Cho do not explicitly teach supplying water to the tub for a second time, rinsing the surface of the tub and draining water from the tub for a second time. However, It would have been obvious to one of ordinary skill in the art at the time of the invention to repeat the supply and drain steps in order to enhance the cleaning process with a reasonable expectation of success. Moreover, the tub surface will be rinsed with the addition of water.

Further regarding claims 4 and 5, Han/Cho do not explicitly teach supplying water to the surface of the tub during the step of draining water from the tub for a second time thereby preventing resticking of contaminants to the

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surface of the tub. However, It would have been obvious to one of ordinary skill in the art at the time of the invention to repeat the step of supplying water to the surface of the tub during the step of draining water from the tub for a second time in order enhance the cleaning process with a reasonable expectation of success.

Regarding claims 5 and 14, it would have been obvious to one of ordinary skill in the art at the time of the invention to use high speed rotation to remove water from the surface of the tub because high speed rotation is a conventional technique for water removal (see, for example, US 2,588,774 to Smith at col. 8, lines 5-8, which teaches a washing machine wherein clothes are spun at high speed to remove rinse water).

Regarding claim 6, Han/Cho do not explicitly teach rotating the tub while water is supplied to the tub. However, It would have been obvious to one of ordinary skill in the art at the time of the invention to rotate the tub while supplying water in order to create agitation to enhance the cleaning process.

Regarding claims 8, Han/Cho teach rotating a tub and pulsator to generate a centrifugal water stream (Han abstract), which reads on forming a water circulation. It is noted that water will be permeating contaminants while rotating the tub and pulsator per Han.

Regarding claims 9, 10, 31, 32, 33, 34 and 35, Han/Cho teach rotating a tub and pulsator (Han abstract), wherein the tub is rotated at high speed (Cho abstract). Han/Cho do not explicitly teach rotating the tub at low speed. However, It would have been obvious to one of ordinary skill in the art at the time of the invention to rotate the tub at low speed in order to conserve energy.

Regarding claim 11, Han/Cho do not explicitly teach supplying water to the surface of the tub during a later half of the draining step. However, It would have been obvious to one of ordinary skill in the art at the time of the invention to supply water during draining, including during a later half of the draining step, because this is a conventional technique for enhancing the cleaning process (see, for example, the abstract and Fig. 9 of US 5,167,722 to Pastryk, et al. which teaches a spray rinse process for an automatic washer including a rinsing process during the draining step).

Regarding claim 12, Han/Cho do not explicitly teach rotating the tub while water is supplied to the tub during the step of supplying water to the tub surface. However, It would have been obvious to one of ordinary skill in the art at the time of the invention to rotate the tub while thus supplying water to the tub surface for enhancing the removal of water with predictable results.

Regarding claim 13, Han/Cho do not explicitly teach that the step of supplying water to the surface of the tub includes spraying water to the surface. However, It would have been obvious to one of ordinary skill in the art at the time of the invention to spray water to the surface because spraying water is a conventional technique used in enhance cleaning (see, for example, Pastryk at *id.*).

Regarding claims 15-17, Han/Cho do not explicitly teach introducing a bleaching agent into the tub before permeating water into contaminants, which permeation will begin upon the supply of the water. However, It would have been obvious to one of ordinary skill in the art at the time of the invention to introduce a



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bleaching agent, including an oxygen group or halide group agent, before permeation because oxygen and halide group agents are conventionally known bleaching agents (see, for example, US 4,618,444 to Hudson, et al. at col. 2, lines 24-32, which teaches a laundry detergent with a peroxygen bleaching agent and US 2004/0053808 to Raehse, et al. at [0412] which teaches washing or cleaning agents which include halogen bleaching agents) and using bleaching agents which have not been diluted, as by supplied water, enhances cleaning via the relatively higher concentration of the agent.

Regarding claim 18, Han/Cho do not explicitly teach introducing at least one sterilizing agent and a fungicidal agent. However, It would have been obvious to one of ordinary skill in the art at the time of the invention to use a sterilizing agent and fungicidal agent because these agents are conventionally used to enhance cleaning (see, for example, the abstract of US 5,320,805 to Kramer, et al. which teaches a method of using a chemical composition as a cleaner and sterilizer and US 2003/0199417 to Fry, et al. at [0149], which teaches a fabric treatment composition including a fungicide).

Regarding claim 20, Han/Cho do not explicitly teach displaying a tub cleaning course which is under progress on a display of the washing machine during tub cleaning. However, It would have been obvious to one of ordinary skill in the art at the time of the invention to display the course in this manner because displaying the progress of processes on a display of a washing machine would enhance an operator's knowledge of the course progress.

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Regarding claims 21-26, Han/Cho do not explicitly teach displaying an accumulated number of washing times after the tub cleaning on a display of the washing machine. However, It would have been obvious to one of ordinary skill in the art at the time of the invention to use display the washing times in the Han/Cho method because it is conventional to display the accumulated times a process has been completed since it was reset (see, for example, US 2002/0128729 to Blair, et al. at [0037] which teaches a laundry machine control system wherein the total number of times a cycle has been activated since the counts were last cleared is displayed).

Regarding claims 22-25, Han/Cho do not explicitly teach displaying a target number of washing times on a display of the washing machine. However, It would have been obvious to one of ordinary skill in the art at the time of the invention to display the target number when using the Han/Cho method in order to enhance an operator's ability to ensure that the cleanings occur in a timely manner.

Regarding claim 23 specifically, Han/Cho do not explicitly teach that the target number can be changed. However, It would have been obvious to one of ordinary skill in the art at the time of the invention to use a changeable target number with the Han/Cho method in order to fine tune the cleaning process.

Regarding claim 24 specifically, Han/Cho do not explicitly teach manual user selection of a tub cleaning course when the accumulated number of washing times reaches the target number. However, It would have been obvious to one of ordinary skill in the art at the time of the invention to use a manual

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selection of the tub cleaning course with the Han/Cho method in order to allow for operator override in case of an automation problem.

Regarding claim 25 specifically, Han/Cho do not explicitly teach automatic performance of the tub cleaning steps when the accumulated number of washing times reaches the target number. However, It would have been obvious to one of ordinary skill in the art at the time of the invention to automate the Han/Cho method in this manner in order to inhibit the likelihood that the cleaning will be neglected due to operator error.

Regarding claim 26 specifically, Han/Cho do not explicitly teach setting a mode where a user manually selects a tub cleaning course when the accumulated washing times displayed reaches a target number of washing times required for a tub cleaning. However, It would have been obvious to one of ordinary skill in the art at the time of the invention to use such a manual mode with the Han/Cho method in order to allow for operator override in case of an automation problem.

Regarding claim 27, Han/Cho do not explicitly teach setting a reserved time so that the tub cleaning is performed automatically if the set reserved time is reached. However, It would have been obvious to one of ordinary skill in the art at the time of the invention to automate the Han/Cho method in this manner in order to inhibit the likelihood that the cleaning will be neglected due to an operator's forgetfulness.

Regarding claim 28, Han/Cho do not explicitly teach setting a mode where tub cleaning automatically progresses. However, It would have been obvious to

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one of ordinary skill in the art at the time of the invention to automate the process in this manner would free up an operator who would otherwise be needed to manually perform the cleaning.

Regarding claim 29, Han/Cho teach rotating a tub to generate a centrifugal water stream (Han abstract), which reads on forming a water circulation. It is noted that contaminants will be separating while rotating the tub per Han.

Regarding claim 30, Han/Cho teach rotating the tub at high speed (Cho abstract). It is noted that contaminants will be separating and water will be circulating in a radial direction in the tub while rotating at high speed per Cho.

8. Claims 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Han in view of Cho and further in view of KR 20010093969 to Kim (hereinafter "Kim").

Han/Cho do not explicitly teach permeating by rotating a pulsator provided in the tub for forming a water circulation. However, Kim teaches a washing machine tub cleaning method wherein a water current is made to rise along the tub wall due to a rotating pulsator, which reads on a pulsator forming water circulation. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the rotating pulsator teaching of Kim with the Han/Cho method because affecting a water current in this manner increases agitation, enhancing the cleaning process.

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9. Claims 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Han in view of Cho and further in view of JP 2002346288 to Iwai, et al. (hereinafter "Iwai").

Han/Cho do not explicitly teach the use of a sterilizing agent which is a halogenated hydantoin compound that emits hypohalogenated acid. However, Iwai teaches a washing machine including a housing unit for use with a sterilizing agent which includes a hydantoin halide compound for releasing a hypohalogenic acid by water contact, which reads on the halogenated hydantoin compound. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the hydantoin compound of Iwai with the Han/Cho method in order to inhibit bacteria growth and sanitation problems.

### ***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. JP 2002248295 to Omura, et al. discloses a washing machine cleaning method comprising a washing process and a rinsing process. JP 2003104806 to Nobata, et al. discloses a method of growth inhibition and sterilization of microorganisms. JP 10230280 to Fujita, et al. discloses a water purification method. JP 10212209 to Mikami, et al. discloses a sterilizing cleaning agent.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Golightly whose telephone number is

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(571) 270-3715. The examiner can normally be reached on Monday to Thursday, 7:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mikhail Kornakov can be reached on (571) 272-1303. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/Michael Kornakov/  
Supervisory Patent Examiner, Art Unit 4151